

Japanese spiders of the genus *Tylorida* (Araneae: Tetragnathidae)

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Abstract — The Japanese spiders of the genus *Tylorida* is revised. *T. magniventer* Bösenberg & Strand 1906 is newly synonymized with *T. striata* (Thorell 1877). *T. ventralis* (Thorell 1877) is a new record for Japan, although whether or not it is an indigenous species remains unclear.

Key words — *Tylorida*, *striata*, *magniventer*, *ventralis*, new synonymy, new records, Japan

Bösenberg & Strand (1906) described *Tylorida magniventer* belonging to the family Tetragnathidae as a new species. Although they did not indicate the type locality of this species, Japanese researchers speculated that the type locality is somewhere in Japan (Yaginuma 1970, 1977; Tanikawa 2000) judging from the title of their paper, Japanische Spinnen. In the same paper, they recorded *T. striata* (Thorell 1877) from Japan for the first time. *T. striata* has been recorded from Japan thereafter by several authors (Yaginuma 1960, 1986; Chikuni 1989), while, *T. magniventer* has never been recorded since the original description. I examined the type specimen of the species in order to clarify the taxonomic position, and came to the conclusion that *T. magniventer* is a junior synonym of *T. striata*. After examining many spider specimens collected from various parts of Japan, I recognized two species of *Tylorida* occurring in Japan, that is, *T. striata* (Thorell 1877) and *T. ventralis* (Thorell 1877); *T. ventralis* is recorded from Japan for the first time.

The voucher specimens are deposited in the collection of the Department of Zoology, National Science Museum, Tokyo. I wish to express my heartfelt thanks to Dr. Tadashi Miyashita and Dr. Richard Walters, the University of Tokyo, for their critical reading of the manuscript of this paper. I am deeply indebted to Dr. Peter Jäger, Senckenberg Museum, Frankfurt am Main, for loaning the type specimen.

Family Tetragnathidae
Genus *Tylorida* Simon 1894

Tylorida Simon 1894, p.737. Type species *Meta striata* Thorell 1877; Yaginuma 1960, p.72; 1986, p. 219; Zhu, Song & Zhang 2003, p.298.

Anopas Archer 1951, p. 7. Type species *Leucauge ventralis* (Thorell 1877).

Diagnosis. *Tylorida* can be separated from the other genera of the subfamily Leucauginae by the following features. The tegulum of male palp is swollen, the sperm duct is long and draws complex curve. The basal part of paracymbium is less sclerotized. The first leg of *Tylorida* is long compared with the second leg; ratio of length of the first leg to the second leg is 1.6 or more, but less than 1.6 in other genera.

Description. Carapace longer than wide. MOA almost square. Labium wider than long. Sternum almost as long as wide or slightly longer than wide. First leg is much longer than second leg. Femur of fourth leg with 5–6 long trichobothria. Male palp: tegulum swollen, sperm duct long and winding, cymbium with projection other than paracymbium, embolus wrapped by less sclerotized conductor, basal part of paracymbium less sclerotized. Abdomen longer than wide. Epigynum less sclerotized. Seminal receptacle not sclerotized.

Tylorida striata (Thorell 1877)
(Figs. 1–2, 5–6)

Meta striata Thorell 1877, p.427 [type not examined].

Tylorida striata: Simon 1894, p.737, fig. 809; Bösenberg & Strand 1906, p.187, pl. 15, fig. 420; Yaginuma 1960, p.72, fig. 67; Chrysanthus 1963, p. 727, figs. 1–4; Chrysanthus 1975, p. 30, figs. 115–116; Yaginuma 1986, p.129, fig. 68–6; Davies 1988, p.288, fig. 13; Chikuni 1989, p.93, fig. 10; Song, Zhu & Chen 1999, p. 223, figs. 129A–B, E; Zhu, Song & Zhang 2003, p. 304, figs. 169A–H, 170A–E.

Tylorida magniventer Bösenberg & Strand 1906, p.187, pl. 15, fig. 397 [juvenile holotype, preserved in Senckenberg Museum, Frankfurt (SMF4272), examined]. **NEW SYNONYMY.**

Specimens examined. JAPAN. 1♀, 27-VIII-1981, Shiroyama-

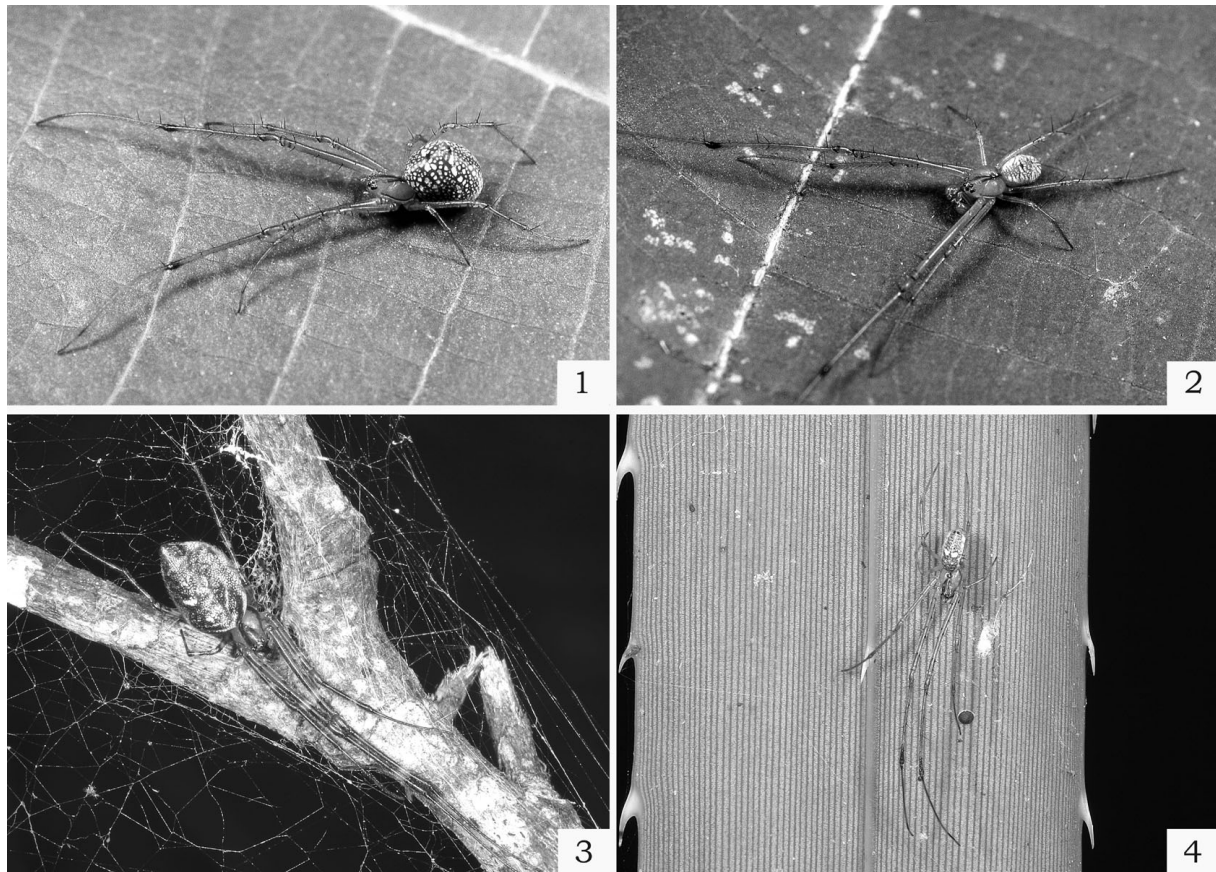


Fig. 1-4. Habitus. — 1, *Tylorida striata* (Thorell 1877), female (Is. Iriomotejima); 2, same, male; 3, *Tylorida ventralis* (Thorell 1877), female (Is. Iriomotejima); 4, same, male.

kôen, Kagoshima-shi, Kagoshima Pref. 3♀, 24-VIII-1987, Urauchi; 1♀, 5-I-1999, 1♀, 27-III-1994, 1♂, 11-VIII-1999, Midara; 3♀1♂, 25-VIII-1988, Shirahama, Iriomotejima Is., Okinawa Pref. (1♀1♂ from Shirahama, NSMT-Ar 5580-5581). INDONESIA. 3♀1♂, 4-5-VIII-1982, Jayapura, Irian Jaya. All specimens were collected by A. Tanikawa.

Description. Based on the Japanese specimens; measurements in parentheses for female traits indicate the range among specimens, while those for male traits are the measurements of another specimen. Measurements (in mm). Body ♀3.72 (3.27-3.92), ♂3.30 (3.52) long. Carapace ♀1.58 (1.42-1.60), ♂1.64 (1.65) long; ♀1.17 (1.10-1.23), ♂1.29 (1.31) wide. Length of legs [female/male; tarsus + metatarsus + tibia + patella + femur = total]: I, 0.88 + 4.24 + 3.36 + 0.78 + 3.56 = 12.82/0.94 + 5.41 + 4.24 + 0.74 + 4.18 = 15.51; II, 0.44 + 2.28 + 1.80 + 0.60 + 2.22 = 7.34/0.65 + 2.59 + 2.06 + 0.56 + 2.44 = 8.30; III, 0.44 + 1.00 + 0.72 + 0.36 + 1.20 = 3.72/0.41 + 1.03 + 0.79 + 0.35 + 1.88 = 4.46; IV, 0.52 + 1.92 + 1.60 + 0.48 + 2.24 = 6.76/0.53 + 2.03 + 1.74 + 0.41 + 2.29 = 7.00. Abdomen ♀2.37 (1.71-2.54), ♂1.74 (1.88) long; ♀1.57 (1.33-1.80), ♂1.30 (1.28) wide.

Female and male. Carapace longer than wide [length/width ♀1.36 (1.23-1.36), ♂1.27 (1.26)]. Median ocular area almost as long as wide [length/width ♀1.11 (0.95-1.12), ♂1.00 (1.00)]; slightly wider in front than behind or same

width [anterior width/posterior width ♀0.95 (0.86-1.00), ♂1.11 (1.00)]. Promargin of chelicera with 3 teeth, retromargin with 4 teeth. Labium wider than long [length/width ♀0.62 (0.55-0.65), ♂0.63 (0.62)]. Sternum almost as long as wide [length/width ♀1.17 (0.96-1.17), ♂1.02 (0.98)]. Length of leg I/length of carapace ♀8.11 (7.16-8.67), ♂9.46 (10.1). Male palp (Fig. 6): typical *Tylorida* type (see description of the genus). Abdomen longer than wide [length/width ♀1.51 (1.29-1.51), ♂1.34 (1.47)], anterior part risen. Epigynum (Fig. 5), simple, less sclerotized.

Coloration and markings. Female and male (Figs. 1-2). Carapace pale yellow, margined with black, with V-shaped black midline. Dorsum of abdomen gold with several black spots.

Remarks. *T. striata* can be easily distinguished from other species by the general appearance, abdomen is gold and raised high.

Notes. I examined the type specimen of *T. magniventer* and came to the conclusion that it is a young spider of *T. striata*. The midline on the carapace, though it became pale, and risen abdomen exactly agree with those of *T. striata*. Because the specimen was a juvenile, the figure of the epigynum in the original description was drawn vaguely.

Distribution. Japan, China, Taiwan, Indonesia, Australia.

Tylorida ventralis (Thorell 1877)
(Figs. 3–4, 7–8)

Meta ventralis Thorell 1877, p.423 [type not examined].

Argyropeira ventralis: Thorell 1887, p.138; Workman 1896, p.55, pl.55.

Anopas ventralis: Archer 1951, p.7, figs. 8–9.

Tylorida ventralis: Chrysanthus 1975, p.31, figs. 117–120; Yoshida 1978, p.8, figs. 1–6; Song, Zhu & Chen 1999, p.223, figs. 129C–D; 2002, p.29, figs. 4A–J; Zhu, Song & Zhang 2003 p.308, figs. 172A–J, pl. XE–H.

Leucauge ventralis: Tikader 1982, p.85, figs. 168–171.

Leucauge sphenoida Wang 1991, p.157, figs. 17–20; Song, Zhu & Chen 1999, p.216, figs. 121O, 122K–L, 130R.

Specimens examined. JAPAN. 5♀2♂, 2-IV-2003, Funaura, Iriomotejima Is., Okinawa Pref. (1♀1♂, NSMT-Ar 5582–5583). SINGAPORE. 2♀, 11-25-VIII-1993, H. Nakajima leg.

Description. Based on the Japanese specimens; measurements in parentheses for female traits indicate the range among specimens, while those for male traits are the measurements of another specimen. Measurements (in mm). Body ♀6.47 (6.13–7.58), ♂5.59 (4.90) long. Carapace ♀2.43 (2.22–2.77), ♂2.49 (2.16) long; ♀1.73 (2.62–1.97), ♂1.80 (1.56) wide. Length of legs [female/male; tarsus + metatarsus + tibia 1+ patella + femur = total]: I, 1.12 + 5.88 + 4.59 + 1.09 + 5.12 = 17.80 / 1.40 + 8.70 + 7.10 + 1.20 + 6.90 = 25.30; II, 0.88 + 3.41 + 2.56 + 0.88 + 3.41 = 11.14 / 0.90 + 4.70 + 3.70 + 0.90 + 4.30 = 14.50; III, 0.59 + 1.32 + 1.03 + 0.53 + 1.76 = 5.23 / 0.60 + 1.60 + 1.25 + 0.60 + 2.05 = 6.10; IV, 0.71 + 2.82 + 2.09 + 0.65 + 3.12 = 9.39 / 0.70 + 3.40 + 2.70 + 0.70 + 3.70 = 11.20. Abdomen ♀4.05 (3.72–

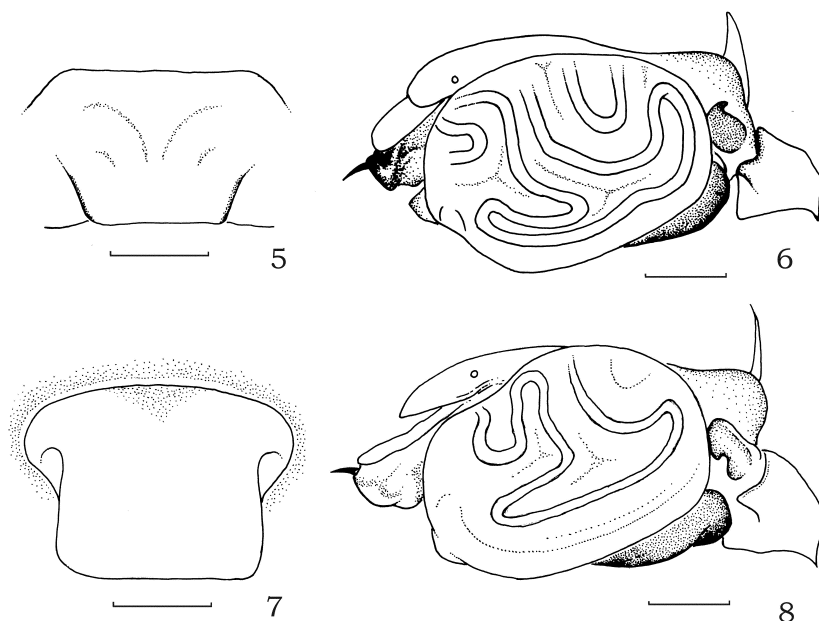
4.60), ♂3.44(2.83) long; ♀2.40 (2.20–3.00), ♂1.92 (1.60) wide.

Female and male. Carapace longer than wide [length/width ♀1.41 (1.37–1.43), ♂1.38 (1.39)]. Median ocular area almost as long as wide [length/width ♀0.90 (0.90–1.12), ♂1.00 (1.04)]; almost same width as in front as behind [anterior width/posterior width ♀0.98 (0.94–0.98), ♂1.08 (1.11)]. Promargin of chelicera with 3 teeth, retromargin with ♀4(4–5) / ♂4 teeth. Labium wider than long [length/width ♀0.73 (0.59–0.73), ♂0.63 (0.60)]. Sternum slightly longer than wide [length/width ♀1.06 (1.05–1.10), ♂1.15 (1.12)]. Length of leg I/length of carapace ♀7.33 (7.05–7.69), ♂10.2 (9.70). Male palp (Fig. 8): typical *Tylorida* type. Abdomen longer than wide [length/width ♀1.69 (1.42–1.69), ♂1.79 (1.77)], posterior end a little sharp. Epigynum (Fig. 7) simple, less sclerotized.

Coloration and markings. Female and male (Figs. 3–4). Carapace pale yellow, margined with dark brown, with dark brown median band. Dorsum of abdomen silver gray, with black markings.

Remarks. *T. ventralis* can be easily distinguished from other Japanese spiders by its general appearance, because there is no spider which resembles it in Japan. *T. cylindrata* (Wang 1991), occurring in China, somewhat resembles *T. ventralis*, but can be easily separated by; 1) *T. cylindrata* is about twice as large as *T. ventralis* in total length; 2) epigynum is posteriorly narrowing in *T. cylindrata* but not in *T. ventralis*; 3) in male palp, conductor and embolus are more projecting from cymbium in *T. cylindrata* than *T. ventralis*.

Notes. In Japan, *T. ventralis* has been found only in the forest near Funaura, Iriomotejima Is., and has never been



Figs. 5–8. Genital organ. — 5, *Tylorida striata* (Thorell 1877) (Is. Iriomotejima), epigynum ventral view (NSMT-Ar 5580); 6, same, male palp lateral view (NSMT-Ar 5581); 7, *Tylorida ventralis* (Thorell 1877) (Is. Iriomotejima), epigynum ventral view (NSMT-Ar 5582); 8, same, male palp lateral view (NSMT-Ar 5583). (Scales: 0.1mm.)

found from any other places on the same island. This may indicate that the occurrence of this population is temporary. There are two similar examples, that is, *Leucauge decorata* and *Tetragnatha bituberculata*. Although I recorded both of these spiders from Iriomotejima Is. as new records for Japan respectively (Tanikawa 1990, 1996), I have been unable to find them on the island since the first discoveries of them. It is likely that their occurrence on the island was temporary.

Distribution. Japan (Iriomotejima Is.), China, Taiwan, Singapore, India.

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